

**C L A I M S**

1. A time-division multiplex radio communication method, wherein a transmitter transmits radio signal bursts destined for at least one receiver in time slots allocated to a channel on a carrier frequency, wherein the radio signal of each burst consists of a block of digital symbols including training symbols provided for an estimation of demodulation parameters by the receiver and information symbols to be estimated by the receiver by a demodulation using the estimated parameters, wherein the training symbols comprise a first sequence of symbols placed at the start of the block from 5 which each radio signal burst is formed and a second sequence of symbols placed at the end of said block, wherein each radio signal burst comprises an initial portion in which the radio signal rises in power up to a range of transmission power, a central portion in which the radio signal is transmitted within said power range and a final portion in which the radio signal decreases 10 in power from said power range, wherein at least one of the first and second sequences of training symbols gives rise to a modulation of the radio signal of the burst outside the central portion, and wherein the receiver receiving a signal segment corresponding to a burst formed from a symbol block executes 15 the steps of:

20 - estimating first demodulation parameters on the basis of the first sequence of training symbols and the start of the signal segment;

- calculating first estimations of the information symbols of said block on the basis of the first demodulation parameters and the signal segment scanned from start to end;

25 - estimation of second demodulation parameters on the basis of the second sequence of training symbols and the end of the signal segment; and

- calculation of second estimations of the information symbols of said block on the basis of the second demodulation parameters and the signal segment scanned from end to start.

30

2. A method as claimed in claim 1, wherein the first and second sequences of training symbols are distinct.

3. A method as claimed in claim 1, wherein the first sequence of training symbols gives rise to a modulation of the radio signal of the burst in the initial portion and the second sequence of training symbols gives rise to a modulation of the radio signal of the burst in the final portion.

4. A method as claimed in claim 1, wherein the radio signal transmitted in the initial portion of a burst before the first sequence of training symbols and the radio signal transmitted in the final portion of the burst after the second sequence of training symbols are signals resulting from baseband signals having a constant phase.

5. A method as claimed in claim 1, wherein the transmitter selects at least one of the first and second sequences of training symbols, inserted in the block from which each radio signal burst is formed, from a set of several predetermined sequences on the basis of signalling information to be transmitted to the receiver.

6. A method as claimed in claim 5, wherein said channel supports a plurality of logical channels, and wherein the signalling information on the basis of which the sequence of training symbols is selected indicates the logical channel to which the burst pertains.

7. A method as claimed in claim 5, wherein each radio signal burst is formed according to a modulation selected from a plurality of possible modulations, and wherein the signalling information on the basis of which the sequence of training symbols is selected indicates the modulation according to which the burst is formed.

8. A method as claimed in claim 7, wherein said plurality of possible modulations comprise a coded modulation and a non-coded modulation.

9. A time-division channel multiplexing radio communication transmitter, comprising means for transmitting radio signal bursts destined for at least one receiver in time slots allocated to a channel on a carrier frequency, wherein the transmission means comprise means for forming the radio signal of each burst from a block of digital symbols including training symbols provided for an estimation of demodulation parameters by the receiver and information symbols to be estimated by the receiver by a demodulation using the estimated parameters, wherein the training symbols comprise a first sequence of symbols placed at the start of the block of symbols from which each radio signal burst is formed and a second sequence of symbols placed at the end of said block, and wherein the transmission means further comprise power adjustment means controlled to provide each radio signal burst with an initial portion in which the radio signal rises in power up to a range of transmission power, a central portion in which the radio signal is transmitted within said power range and a final portion in which the radio signal decreases in power from said power range, whereby at least one of the first and second sequences of training symbols gives rise to a modulation of the radio signal of the burst outside the central portion.

10. A transmitter as claimed in claim 9, wherein the first and second sequences of training symbols are distinct.

11. A transmitter as claimed in claim 9, wherein the radio signal transmitted in the initial portion of a burst before the first sequence of training symbols and the radio signal transmitted in the final portion of the burst after the second sequence of training symbols are signals resulting from baseband signals having a constant phase.

12. A transmitter as claimed in claim 9, further comprising means for selecting at least one of the first and second sequences of training symbols, inserted in the block of symbols from which each radio signal burst is formed,

092209061-A00000

from a set of several predetermined sequences on the basis of signalling information to be transmitted to the receiver.

13. A transmitter as claimed in claim 12, wherein said channel supports a plurality of logical channels, and wherein the signalling information on the 5 basis of which the sequence of training symbols is selected indicates the logical channel to which the burst pertains.
14. A transmitter as claimed in claim 12, further comprising modulating means for forming each radio signal burst according to a modulation selected from a plurality of possible modulations, and wherein the signalling information 10 on the basis of which the sequence of training symbols is selected indicates the modulation according to which the burst is formed.
15. Transmitter as claimed in claim 14, wherein said plurality of possible modulations comprise a coded modulation and a non-coded modulation.